



"A Federal Resource"

RADON INSTRUMENTATION

Atmospheric Monitor

EML's ^{222}Rn analyzers at the Mauna Loa Observatory (a regional baseline station of the NOAA/Climate Monitoring and Diagnostics Laboratory) and at the Pallas-Sodankyla, Finland, Global Atmosphere Watch Station (as part of a collaboration with the Finnish Meteorological Institute) have been a unique source of reliable ^{222}Rn data to the scientific community since 1990. Researchers use the data to help determine air mass provenance and the timing of events transporting air that has been in contact with a landmass to the oceanic measurement sites. Additionally, atmospheric modelers use this rare database (available on the EML internet homepage at URL <http://www.eml.doe.gov>) to test and validate the transport component of general circulation models.



See references:

- ▶ Hutter, A. R., R. J. Larsen, H. Maring, J. T. Merrill, ^{222}Rn at Bermuda and Mauna Loa: Local and Distant Sources, J. Radioanal. and Nuclear Chem., Vol. 193, No. 2, pp. 309-318, 1995.
- ▶ Collé, R., M. P. Unterwiesing, P. A. Hodge, J. M. R. Hutchinson, S. Whittlestone, G. Polian, B. Ardouin, J. G. Kay, J. P. Friend, B. W. Blomquist, W. Nadler, T. T. Dang, R. J. Larsen and A. R. Hutter, An international intercomparison of marine atmospheric ^{222}Rn measurements in Bermuda, JGR, Vol. 100, No. D8, pp. 16617-16638, 1995.

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Radgrabber Aircraft Package

Using advanced electrostatic collection techniques which eliminate bulky decay chambers and heavy compressors, EML's Radgrabber instrument weighs only 20 pounds, flies unattended and has the sensitivity required to make real time (1 minute) measurements of very low ^{222}Rn concentrations encountered in the upper atmosphere. Researchers use the ^{222}Rn data obtained with the Radgrabber to augment other measurements obtained in atmospheric transport studies.



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Radometer

EML's Radometer is a portable survey instrument used for real time measurements of ^{222}Rn and ^{220}Rn . A dual electric field configuration eliminates filters and pumps, thus reducing weight and enabling several days of operation with three flashlight batteries (contained in the silver handle). The Radometer rapidly characterizes (3 to 15 minutes) ^{222}Rn and ^{220}Rn levels in homes and other sites.

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Barrel Radometer

EML has designed, built and is now testing the Barrel Radometer instrument to replace the much larger Atmospheric Monitors. Although the entire instrument and support electronics are contained in a weatherproof 50 gallon drum, the Barrel Radometer has a ^{222}Rn sensitivity comparable to the much larger Atmospheric Monitor stationed in Finland.

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